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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,518	11/27/2001	Dong-Hyun Kim	P-0286	8130

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EXAMINER	
KERVEROS, JAMES C	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/993,518	KIM, DONG-HYUN	
	Examiner	Art Unit	
	JAMES C KERVEROS	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5,6,13,14 and 17* is/are allowed.

6)☒ Claim(s) *1-4,7-12,15,16,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This is a Final Office Action in response to Amendment filed November 15, 2004, in reply to the Office Action mailed August 17, 2004. Claims 1-19 are pending and are hereby presented for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 7-12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dulaney et al. (U.S. Patent No. 3,934,224), in view of Cloke et al. (U.S. Patent No. 6,292,912), ISSUED: September 18, 2001, FILED: February 27, 1998

Regarding independent Claims 1 and 7, Dulaney discloses an apparatus and method for performing bit error rate (BER) computation in a communication system, comprising:

A computer (111) to determine the bit error rate (BER) which commands a BER test by sending a command message (202) to scanners 114 and 115 from comparator 130 via command links 121 and 120, to error-rate monitoring units 106 and 107 (203), FIGS. 1 and 2. The computer (111) receives a BER value (204) in which the monitored

data is sent to comparator 130 from units 106 and 107 via telemetry data links 122 and 109, respectively and displays the BER value (207).

A roadside equipment (RECEIVER SECTION, comprising data set 104 and a computer 105) that transmits a BER test message from telemetry data link 109, according to the BER test command.

An on-board equipment (TRANSMITTER SECTION, comprising data set 102 and a computer 101) also including comparator 130 that compares the BER test message (data link 109) received from the roadside equipment (RECEIVER) from error-rate monitoring unit 107 with a previously stored BER test message (data link 122) from error-rate monitoring unit 106 to compute the BER value (107) and transmit the BER value to the computer (111) via the roadside equipment. Process 205 consists of determining whether or not error-rate monitoring units 106 and 107 are synchronized, using comparator 130, in which unit data received from units 106 and 107 (process 204) is compared bit for bit.

Dulaney does not explicitly disclose a bit error rate (BER) testing apparatus and method, wherein "the BER testing mode operates independently from the operating mode". Cloke discloses a Disk drive 1, which has a normal mode of operation and a built-in self-test (BIST) mode of operation. The BIST mode of operation can be used for estimating the BER of disk drive 1 and locating defective sites on recording surface 14a of disk 14. Figure 9 is a flow chart showing the steps for estimating the BER for the disk drive of Figure 1. The normal mode of operation and the (BIST) mode of operation operate independently from each other. It would have been obvious to a

person having ordinary skill in the art at the time the invention was made to use the normal mode of operation and a built-in self-test (BIST) mode of operation independent from each other, as taught by Cloke, with the apparatus and method of Dulaney, for the purpose of estimating a bit error rate (BER), since using a (BIST) mode of operation independent of normal mode provides a sequence of expected samples under known test conditions, which enhances BER evaluation in a communication system.

Regarding Claim 2, Dulaney discloses BER test command (202) inputted to a local server such as computer (111) and transmitted to the roadside equipment (RECEIVER SECTION).

Regarding Claims 7 and 8, further, Dulaney discloses roadside equipment (RECEIVER SECTION) and onboard equipment (TRANSMITTER SECTION) where the operation mode is determined by an output of a switch, such as using the process at block (201) with various initialization procedures, common to most data processing systems.

Regarding Claims 9-12 and 15, Dulaney discloses transmitting a BER testing initiation message block (201) common to most data processing systems from a PC computer (111) to a roadside equipment (RECEIVER SECTION) and to an on-board equipment (TRANSMITTER SECTION), where procedure (202) commands the multi-input scanners 114 and 115 to select a transmission telemetry link to be monitored, associated with the error data monitoring of transmission telemetry link 113 between TRANSMITTER and RECEIVER SECTIONS, FIGS. 1 and 2.

Storing a number in data set 110 corresponding to data received by the data set 108 via telemetry link 109.

Transmitting a response from the data set 110 to the BER testing initiation message block (201) from the on-board equipment (TRANSMITTER SECTION) to the roadside equipment (RECEIVER SECTION).

Transmitting the response from the data set 110 to the BER testing initiation testing message (102) to the PC (111) from the roadside equipment (RECEIVER SECTION) to the onboard equipment (TRANSMITTER SECTION).

Comparing data using comparator 130 that compares the BER test message (data link 109) received from the roadside equipment (RECEIVER) from error-rate monitoring unit 107 with a previously stored BER test message (data link 122) from error-rate monitoring unit 106 to compute the BER value (107).

Transmitting the measured BER value (107) from PC (111) of the on-board equipment (TRANSMITTER SECTION) to the roadside equipment (RECEIVER SECTION) via low speed command link 120,

Transmitting the BER value (107) to the PC (111) and transmitting a response to receipt of the BER value via command link 121 to the on-board equipment (TRANSMITTER SECTION).

Regarding independent Claim 16, Dulaney substantially discloses a bit error rate (BER) testing method in a communication system, comprising the steps of:

Transmitting a BER testing initiation message block (201) common to most data processing systems from a PC computer (111) to a roadside equipment (RECEIVER

SECTION) and to an on-board equipment (TRANSMITTER SECTION), where procedure (202) commands the multi-input scanners 114 and 115 to select a transmission telemetry link to be monitored, associated with the error data monitoring of transmission telemetry link 113 between TRANSMITTER and RECEIVER SECTIONS, FIGS. 1 and 2.

Storing a number in data set 110 corresponding to data received by the data set 108 via telemetry link 109.

Transmitting a response from the data set 110 to the BER testing initiation message block (201) from the on-board equipment (TRANSMITTER SECTION) to the roadside equipment (RECEIVER SECTION).

Transmitting the response from the data set 110 to the BER testing initiation testing message (102) to the PC (111) from the roadside equipment (RECEIVER SECTION) to the onboard equipment (TRANSMITTER SECTION)

Comparing data using comparator 130 that compares the BER test message (data link 109) received from the roadside equipment (RECEIVER) from error-rate monitoring unit 107 with a previously stored BER test message (data link 122) from error-rate monitoring unit 106 to compute the BER value (107).

Transmitting the measured BER value (107) from PC (111) of the on-board equipment (TRANSMITTER SECTION) to the roadside equipment (RECEIVER SECTION) via low speed command link 120,

Transmitting the BER value (107) to the PC (111) and transmitting a response to receipt of the BER value via command link 121 to the on-board equipment (TRANSMITTER SECTION).

Dulaney does not explicitly disclose storing the BER value in the memory of the on-board equipment, if no response is received indicating the receipt of the BER value. However, Dulaney discloses storing the BER value (107) in the memory of PC (111) of the onboard equipment (TRANSMITTER SECTION). The bit error rate (BER) is calculated based on the number of miscomparisons that result for a given quantity of data transmitted. When the system exceeds a predetermined level corrective action may be taken. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the corrective action when the system exceeds a predetermined level based on the number of errors, as taught by Dulaney, so as to indicate the communication system status.

Dulaney does not explicitly disclose a bit error rate (BER) testing apparatus and method, wherein "the BER testing mode operates independently from the operating mode". Cloke discloses a Disk drive 1, which has a normal mode of operation and a built-in self-test (BIST) mode of operation. The BIST mode of operation can be used for estimating the BER of disk drive 1 and locating defective sites on recording surface 14a of disk 14. Figure 9 is a flow chart showing the steps for estimating the BER for the disk drive of Figure 1. The normal mode of operation and the (BIST) mode of operation operate independently from each other. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the

normal mode of operation and a built-in self-test (BIST) mode of operation independent from each other, as taught by Cloke, with the apparatus and method of Dulaney, for the purpose of estimating a bit error rate (BER), since using a (BIST) mode of operation independent of normal mode provides a sequence of expected samples under known test conditions, which enhances BER evaluation in a communication system.

3. Claims 3, 4, 18 and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Dulaney et al. (US 3934224) in view of Cloke et al. (U.S. Patent No. 6,292,912) and further in view of Labonte et al. (US 6073257).

Regarding independent Claim 18, Dulaney substantially discloses a communication receiver, such as (RECEIVER SECTION, including data set 104 and a computer 105, FIG. 1), comprising:

A radio frequency (RF) interface (104), which converts the analog, transmitted signal (113) to a base-band signal, such as electronic data in digital form utilized in a data sink 105 such as another computer or Teletype machine at a remote station.

A switch (115) multi-input scanner that determines an operational mode of the receiver by selecting one of several inputs to be monitored.

A processor part of the error-rate monitoring unit (107, FIG. 4) that controls the bit error rate (BER) test of the receiver (117) in accordance with the operational mode of the receiver.

A display which is inherent in the PC computer (111) which displays the BER value (107), wherein the BER value is based on the amount of difference between the

standard test message and the received message, by comparing data using comparator 130 that compares the BER test message (data link 109) received from the roadside equipment (RECEIVER) from error-rate monitoring unit 107 with a previously standard test message stored BER test message (data link 122) from error-rate monitoring unit 106 to compute the BER value (107).

A memory part of the PC computer (111) that stores a standard test message (122) for comparison (130) with a received message (109).

Dulaney does not explicitly disclose a bit error rate (BER) testing apparatus and method, wherein "the BER testing mode operates independently from the operating mode". Cloke discloses a Disk drive 1, which has a normal mode of operation and a built-in self-test (BIST) mode of operation. The BIST mode of operation can be used for estimating the BER of disk drive 1 and locating defective sites on recording surface 14a of disk 14. Figure 9 is a flow chart showing the steps for estimating the BER for the disk drive of Figure 1. The normal mode of operation and the (BIST) mode of operation operate independently from each other. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the normal mode of operation and a built-in self-test (BIST) mode of operation independent from each other, as taught by Cloke, with the apparatus and method of Dulaney, for the purpose of estimating a bit error rate (BER), since using a (BIST) mode of operation independent of normal mode provides a sequence of expected samples under known test conditions, which enhances BER evaluation in a communication system.

Regarding Claims 3, 4 and 18, Dulaney does not explicitly disclose a modem that determines a BER value, resulting from the BER test, based on a cyclic redundancy code (CRC) check performed on a BER test message within the received RF signal. Labonte et al. (US 6073257) discloses a CRC error detection decoder 53 where the regenerated bits and the detected bits are sent to a BER detector 55. By comparing the detected bites with the regenerated bits, the BER detector determines the BER. Thus, the BER comes from the BER detector 55, and the frame error rate or frame erasures come from the CRC decoder 53. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the CRC error detection decoder 53, as taught by Labonte, in the modified communication device of Dulaney and Cloke, thus providing motivation to incorporate CRC error detection, since Dulaney already uses bit error rate (BER), so as to provide highly accurate and reliable estimate of the BER.

Regarding Claim 19, Dulaney discloses an operational mode, which is determined by a BER test initiating message block (201).

Allowable Subject Matter

4. Claims 5, 6, 13,14 and 17 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: Claims 5, 13 and 17 have been rewritten in the independent form including all of the limitations of the base claim and any intervening claims, and therefore are allowable. Further, the prior arts of record taken alone or in combination fail to teach,

anticipate, suggest or render obvious the claimed invention for "BER test message including one frame control message channel (FCMC) positioned at the front of the BER test message, the FCMC having system information and exclusively used for a backward link and a plurality of message data channels (MDCs) comprising data to be transmitted between the roadside equipment and the on-board equipment, the plurality of MDCs set as a certain value conforming to a dedicated short range communication (DSRC) standard and used for the backward link and a forward link". Claims 6 and 14 are directly depended upon claims 5 and 13 and therefore are also allowable.

Response to Arguments

5. Applicant's arguments filed November 15, 2004 have been fully considered but they are not persuasive. Claims 1, 2, 7-12, 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dulaney et al. (U.S. Patent No. 3,934,224), in view of Cloke et al. (U.S. Patent No. 6,292,912). Claims 3, 4, 18 and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Dulaney et al. (US 3934224) in view of Cloke et al. (U.S. Patent No. 6,292,912) and further in view of Labonte et al. (US 6073257).
The Applicant argues, on page 22 of the Amendment, that Dulaney et al. does not previously store test messages before start of a BER test and does not operate a BER testing mode independently from an operating mode. In response to Applicant's argument, the Examiner agrees with the Applicant that Dulaney does not disclose, "a BER testing mode operating independently from an operating mode", as amended in the claimed invention. However, under new grounds of rejection, the new reference by

Cloke discloses an apparatus and method having a normal mode of operation and a built-in self-test (BIST) mode of operation, which operate independently from each other, for estimating the BER of disk a drive, as stated in the Office Action, above. In response to Applicant's argument, that Dulaney et al. does not "previously store test messages before start of a BER test", clearly Dulaney discloses "an error rate monitoring unit 106 monitors the data transmitted at point 112 in a manner to accumulate bits of data transmitted at 112 for later transmission to a comparator 130 via data link 122", for the purpose of calculating the bit error rate (BER) of the communication system. Therefore, Dulaney stores test messages, such as accumulating bits of data, before any initiation of BER evaluation by the comparator 130, Figure 1.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES C KERVEROS whose telephone number is (571) 272-3824. The examiner can normally be reached on 9:00 AM TO 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner's Fax: (703) 746-4461
Email: james.kerveros@uspto.gov

Date: 24 January 2005
Office Action: Final Rejection

By: _____

JAMES C KERVEROS
Examiner
Art Unit 2133

Guy J. Lamarre
Primary Examiner